Complete Summary

GUIDELINE TITLE

Clinical guideline on antibiotic prophylaxis for dental patients at risk for infection.

BIBLIOGRAPHIC SOURCE(S)

American Academy of Pediatric Dentistry (AAPD). Clinical guideline on antibiotic prophylaxis for dental patients at risk for infection. Chicago (IL): American Academy of Pediatric Dentistry (AAPD); 2005. 3 p. [6 references]

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: American Academy of Pediatric Dentistry. Clinical guideline on antibiotic prophylaxis for patients at risk. Chicago (IL): American Academy of Pediatric Dentistry; 2002. 2 p.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Bacteremia-induced infections following dental procedures

GUIDELINE CATEGORY

Management
Prevention
Treatment

CLINICAL SPECIALTY

Dentistry
Pediatrics

INTENDED USERS

Dentists

GUIDELINE OBJECTIVE(S)

To help practitioners make appropriate decisions regarding antibiotic prophylaxis for dental patients at risk

TARGET POPULATION

Pediatric patients with medical conditions that predispose them to bacteremia-induced infections following dental procedures, including patients with cardiac conditions, patients with compromised immunity, and patients with shunts, indwelling catheters, or medical devices

INTERVENTIONS AND PRACTICES CONSIDERED

Antibiotic prophylaxis

- Amoxicillin
- Ampicillin
- Clindamycin
- Azithromycin
- Cefazolin

MAJOR OUTCOMES CONSIDERED

Incidence of bacteremia-induced infection

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

A MEDLINE search was performed using the keywords "subacute bacterial endocarditis," "bacteremia," "antibiotic prophylaxis," and "dental infection."

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

The oral health policies and clinical guidelines of the American Academy of Pediatric Dentistry (AAPD) are developed under the direction of the Board of Trustees, utilizing the resources and expertise of its membership operating through the Council on Clinical Affairs (CCA).

Proposals to develop or modify policies and guidelines may originate from 4 sources:

1. The officers or trustees acting at any meeting of the Board of Trustees
2. A council, committee, or task force in its report to the Board of Trustees
3. Any member of the AAPD acting through the Reference Committee hearing of the General Assembly at the Annual Session
4. Officers, trustees, council and committee chairs, or other participants at the AAPD's Annual Strategic Planning Session

Regardless of the source, proposals are considered carefully, and those deemed sufficiently meritorious by a majority vote of the Board of Trustees are referred to the CCA for development or review/revision.

Once a charge (directive from the Board of Trustees) for development or review/revision of an oral health policy or clinical guideline is sent to the CCA, it is assigned to 1 or more members of the CCA for completion. CCA members are instructed to follow the specified format for a policy or guideline. All oral health policies and clinical guidelines are based on 2 sources of evidence: (1) the scientific literature; and (2) experts in the field. Members may call upon any expert as a consultant to the council to provide expert opinion. The Council on Scientific Affairs provides input as to the scientific validity of a policy or guideline.

The CCA meets on an interim basis (midwinter) to discuss proposed oral health policies and clinical guidelines. Each new or reviewed/revised policy and guideline is reviewed, discussed, and confirmed by the entire council.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Once developed by the Council on Clinical Affairs (CCA), the proposed policy or guideline is submitted for the consideration of the Board of Trustees. While the board may request revision, in which case it is returned to the council for modification, once accepted by majority vote of the board, it is referred for Reference Committee hearing at the upcoming Annual Session. At the Reference Committee hearing, the membership may provide comment or suggestion for alteration of the document before presentation to the General Assembly. The final document then is presented for ratification by a majority vote of the membership present and voting at the General Assembly. If accepted by the General Assembly, either as proposed or as amended by that body, the document then becomes the official American Academy of Pediatric Dentistry (AAPD) oral health policy or clinical guideline for publication in the AAPD's Reference Manual and on the AAPD's Web site.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Patients with Cardiac Conditions

Numerous cardiac conditions place patients at risk for endocarditis following dental manipulation. The American Academy of Pediatric Dentistry (AAPD) endorses the American Heart Association's (AHA) guideline on prevention of bacterial endocarditis. In addition to those diagnoses listed in the AHA guidelines, patients with a history of intravenous drug abuse and certain syndromes (e.g., Down, Marfan) may be at risk for developing bacterial endocarditis due to associated cardiac anomalies. The table below titled "Suggested Antibiotic Prophylactic Regimens," lists the suggested prophylaxis regimens.

Suggested Antibiotic Prophylactic Regimens*

Children not allergic to penicillin	Amoxicillin 50 mg/kg (maximum 2 grams) orally 1 hour prior to dental procedure
Children not allergic to penicillin and unable to take oral medications	Ampicillin 50 mg/kg (maximum 2 grams) intravenous (IV) or intramuscular (IM) within 30 minutes before dental procedure
Children allergic to penicillin	Clindamycin 20 mg/kg (maximum 600 mg) orally 1 hour prior to dental procedure or Azithromycin 15 mg/kg (maximum 500 mg) orally 1 hour prior to procedure
Children allergic to penicillin and unable to take oral medications	Clindamycin 20 mg/kg (maximum 600mg) IV or IM or Cefazolin 25 mg/kg (maximum 1gram) IV or IM within 30 min before dental procedure

*No second dose is recommended for any of these regimens. Adapted from: Dajani AS, Taubert KA, Wilson W, Bolger AF, et al. Prevention of bacterial endocarditis: Recommendations by the American Heart Association. JAMA. 1997;227:1794-1801.

Patients with Compromised Immunity

Patients with a compromised immune system may not be able to tolerate a transient bacteremia following invasive dental procedures. This category includes, but is not limited to, patients with the following conditions:

1. Human immunodeficiency virus (HIV)
2. Severe combined immunodeficiency syndrome (SCIDS)
3. Neutropenia
4. Immunosuppression
5. Sickle cell anemia
6. Status post splenectomy
7. Chronic steroid usage
8. Lupus erythematosus
9. Diabetes
10. Status post organ transplantation

Discussion of antibiotic prophylaxis for patients undergoing chemotherapy, irradiation, and hematopoietic cell transplantation appears in a separate AAPD guideline.

Patients with Shunts, Indwelling Vascular Catheters, or Medical Devices

Bacteremia following an invasive dental procedure may lead to colonization of shunts or indwelling vascular catheters. Vascular catheters, such as those required by patients undergoing dialysis, chemotherapy, or frequent administration of blood products, are susceptible to bacterial infections. Ventriculoatrial (VA) or ventriculovenus (VV) shunts for hydrocephalus are at risk of bacteremia-induced infections due to their vascular access. In contrast, ventriculoperitoneal (VP) shunts do not involve any vascular structures and, consequently, do not require antibiotic prophylaxis.

The AAPD endorses the recommendations of the American Dental Association and the American Academy of Orthopaedic Surgeons for management of patients with

prosthetic joints. Antibiotic prophylaxis is not indicated for dental patients with pins, plates, and screws, nor is it indicated routinely for most dental patients with total joint replacements. Antibiotics may be considered when high-risk dental procedures (See table below titled "Dental Procedures Associated with Higher Incidence of Bacteremia") are performed for dental patients within 2 years following implant surgery or for patients who have had previous joint infections. Consultation with the child's physician may be necessary for management of patients with other implanted devices (e.g., Harrington rods, external fixation devices).

Dental Procedures Associated with Higher Incidence of Bacteremia

- Dental extractions
- Periodontal procedures including surgery, subgingival placement of antibiotics fibers/strips, scaling and root planning, probing, recall maintenance
- Dental implant placement and replantation of avulsed teeth
- Endodontic instrumentation or surgery only beyond the apex
- Initial placement of orthodontic bands but not brackets
- Intraligamentary and intraosseous local anesthetic injections
- Prophylactic cleaning of teeth or implants where bleeding is anticipated

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

All oral health policies and clinical guidelines are based on 2 sources of evidence: (1) the scientific literature; and (2) experts in the field.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Prevention of post procedural bacteremia

POTENTIAL HARMS

Not stated

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

IMPLEMENTATION TOOLS

Chart Documentation/Checklists/Forms
Resources

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2002 (revised 2005)

GUIDELINE DEVELOPER(S)

American Academy of Pediatric Dentistry - Professional Association

SOURCE(S) OF FUNDING

American Academy of Pediatric Dentistry

GUIDELINE COMMITTEE

Council on Clinical Affairs

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Not stated

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

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GUIDELINE AVAILABILITY

Electronic copies: Available from the American Academy of Pediatric Dentistry Web site.

Print copies: Available from the American Academy of Pediatric Dentistry, 211 East Chicago Avenue, Suite 700, Chicago, Illinois 60611

AVAILABILITY OF COMPANION DOCUMENTS

Information about the American Academy of Pediatric Dentistry (AAPD) mission and guideline development process is available on the AAPD Web site.

The following implementation tools are available for download from the AAPD Web site:

- Dental growth and development chart
- American Academy of Pediatric Dentistry Caries-Risk Assessment Tool (CAT)

PATIENT RESOURCES

None available

NGC STATUS

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